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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,432	03/31/2000	Gad S. Sheaffer	2207/6849	3939

7590

01/07/2004

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EXAMINER

KIM, KENNETH S

ART UNIT

PAPER NUMBER

2111

DATE MAILED: 01/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/540,432

Applicant(s)

SHEAFFER, GAD S.

Examiner

Kenneth S KIM

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

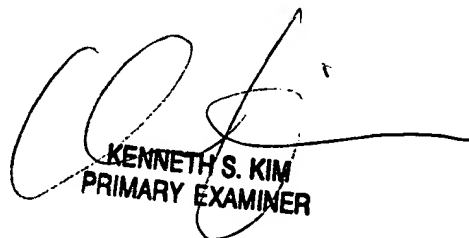
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.


KENNETH S. KIM
PRIMARY EXAMINER

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

1. Claims 1- 28 remain for examination.
2. The abstract of the disclosure is objected to because the current abstract does not reflect the inventive feature of the claimed invention to distinguish over the prior art. Correction is required. See MPEP § 608.01(b).

All amended abstracts are to be submitted on a **separate sheet** (without the brackets and underlines) in addition to the mark-up copy.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 7, 12, 19, and 24, the nature of steering is not clear. There is no recitation of any path variation.

5. Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Rustad et al, U.S. Patent No. 5,442,760.

Rustad et al teaches the invention as claimed including a method for executing a set of instructions in a processor comprising:

- (a) decoding the set of instruction (col. 7, line 2),
- (b) steering each decoded instruction of the set of instructions into an instruction cache so as to store each of the decoded instructions based on a particular one of a set of

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execution units that the decoded instruction requires (col. 7, lines 52, 57, 61, 64 and 65), and

(c) issuing each of the set of instructions from said instruction cache to a particular one of said set of execution units (fig. 3), and

further teaches as in claims 2-6,

(d) further comprising storing each of the set of instructions into a particular one of a set of bins (col. 6, line 61; col. 7, line 65) in the instruction cache that corresponds to the particular one of the set of execution units that the instruction requires – claim 2,

(e) further comprising renaming a set of registers (well known in a superscalar machine; col. 4, line 19; col. 8, lines 44, 48, and 50) – claim 3,

(f) scheduling and executing a particular one of the set of instructions if the particular one of the set of instructions is found in the instruction cache (col. 7, lines 1 and 6) – claims 4 and 5,

(g) fetching a particular one of the set of instructions from a memory device if the particular one of the set of instructions is not found in the instruction cache (col. 6, line 59) – claim 6.

The method claims 7-11 with scheduling the set of instructions to reduce pipeline stall (col. 8, lines 2, 20, and 23), the method claims 12-18 with execution unit clusters and second steering in each cluster (col. 3, line 3; see Lipasti), the processor claims 19-23 with crossbar to steer (col. 2, line 8) and reservation station to avoid pipeline stalls (use of reservation station is well known), and the processor claims 24-28 with

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execution unit clusters and second crossbar are equivalently rejected based on the same reason.

6. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

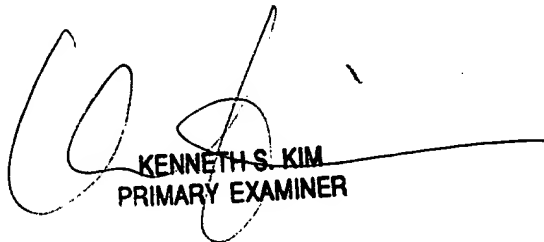
Sheaffer (6,351,802) taught a method of using pre-scheduled instruction cache.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth S KIM whose telephone number is (703) 305-9693. The examiner can normally be reached on M-F (8:30-17:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on (703) 305-4815. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

January 5, 2004


KENNETH S. KIM
PRIMARY EXAMINER